



Selected Acquisition Report (SAR)

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Ballistic Missile Defense System (BMDS)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

Ballistic Missile Defense System (BMDS)

DoD Component

DoD

Responsible Office

Responsible Office

VADM James D. Syring
Missile Defense Agency (MDA)
5700 18th Street
Fort Belvoir, VA 22060-5573
james.syring@mda.mil

| | |
|----------------------|-------------------|
| Phone | 571-231-8006 |
| Fax | 571-231-8090 |
| DSN Phone | 289-8006 |
| DSN Fax | 289-8090 |
| Date Assigned | November 19, 2012 |

References

SAR Baseline (Planning Estimate)

National Security Presidential Directive (NSPD) - 23 dated December 16, 2002

Mission and Description

Mission and Description

To develop and deploy a layered Ballistic Missile Defense System (BMDS) to defend the United States (U.S.), its deployed forces, allies, and friends from ballistic missile attacks of all ranges and in all phases of flight.

Following guidance from the President, the Secretary of Defense approved the Ballistic Missile Defense (BMD) Review Report (dated February 2010), which established the following policy priorities to frame missile defense development and acquisition program strategies:

1. The U.S. will continue to defend the homeland against the threat of limited ballistic missile attack.
2. The U.S. will defend against regional missile threats to U.S. forces, while protecting allies and partners and enabling them to defend themselves.
3. Before new capabilities are deployed, they must undergo testing that enables assessment under realistic operational conditions.
4. The commitment to new capabilities must be fiscally sustainable over the long term.
5. U.S. BMD capabilities must be flexible enough to adapt as threats change.
6. The U.S. will seek to lead expanded international efforts for missile defense.

Executive Summary

Introduction

The Missile Defense Agency (MDA) accomplished a number of key goals towards developing and deploying a layered Ballistic Missile Defense (BMD) system to defend the United States (U.S.) homeland, its deployed forces, allies, and international partners against the increasingly capable ballistic missile threat. Potential adversaries are acquiring a greater number of ballistic missiles, increasing their range, and making them more accurate. MDA's mission has become more complex as potential adversaries are also incorporating more sophisticated BMD countermeasures.

MDA's overriding goal continues to be supporting the warfighter. This is accomplished by incrementally improving and deploying existing capability, demonstrating that capability with complex ground and flight tests, and continuous development of new technologies to improve BMD capability and reliability.

Homeland Defense and Regional Defense

MDA is committed to expand homeland defenses to include 44 Ground Based Interceptors (GBIs). Analysis of flight test data is directing ongoing improvements of the Capability Enhancements (CE) I and II Exoatmospheric Kill Vehicles (EKVs) for the GBIs. Currently there are 30 operational GBIs in place to protect the U.S. against intercontinental ballistic missile attacks from threats such as North Korea and Iran. In 2013, MDA began refurbishment of Missile Field 1 at Fort Greely Alaska, which will increase the silo capacity for the additional 14 GBIs, and continued emplacement of GBIs in Missile Field 2. Consistent with MDA's strategy for improving robustness of the homeland defense capability, the MDA will engineer and allocate integrated system requirements that will drive balanced and integrated BMD System (BMDS) development activities for improved discrimination and sensor capabilities. These activities executed in parallel include development of the Long Range Discrimination Radar, improved discrimination algorithms and fire control, air and space Electro Optical/Infrared capabilities, and the Next Generation Kill Vehicle.

MDA operates a forward-based Army-Navy Transportable Radar Surveillance & Control-Series 2 (AN/TPY-2) radar in Japan. In 2013, the Secretary of Defense directed deployment of an additional AN/TPY-2 radar in Japan to provide additional tracking coverage of ballistic missiles from North Korea. MDA received authority from the Under Secretary of Defense for Acquisition Technology and Logistics (USD(AT&L)) to expend Congressionally-provided funds to acquire a 12th AN/TPY-2 radar. This radar will be used in a 7th Terminal High Altitude Area Defense (THAAD) battery being planned by MDA and the Army.

To protect deployed forces and allies, MDA delivered additional THAAD interceptors and delivered hardware for a third THAAD battery. MDA also achieved first operational deployment of THAAD capability to defend Guam. Additionally, Naval BMD capability was enhanced in 2013 with the completion of six Aegis BMD weapon system installations, increasing the total BMD fleet to 30 ships. Aegis BMD also delivered 10 Standard Missile (SM) -3 Block IAs and 16 SM-3 Block IBs for deployment to the Navy. MDA received authority to procure more SM-3 Block IB missiles in FY 2014. Upon completion of Office of Secretary of Defense (OSD) Director, Operational Test and Evaluation (DOT&E) assessment, MDA will proceed with plans to obtain an SM-3 Block IB full production decision at the end of this year for FY 2015 and beyond.

MDA remains committed to strengthening regional missile defense. MDA continues to work closely with allies around the world to develop capabilities and improve cooperation. MDA continues to support the European Phased Adaptive Approach (EPAA), which provides protection of deployed U.S. forces and allies and is the U.S. contribution to North Atlantic Treaty Organization (NATO) BMD. Phase II of the EPAA is on schedule to deploy in the

2015 timeframe and will include an upgraded Aegis BMD Weapons System version and the SM-3 Block IB missile. Also a component of Phase II capability, Aegis Ashore (AA) will be deployed to Romania. The AA deckhouse and weapon system equipment destined for Romania was installed, integrated, and tested at Lockheed Martin in Moorestown, NJ prior to disassembly and shipment to Romania. During the time it was installed in NJ, the system tracked a NASA space launch and an MDA target tracking event. EPAA Phase III is scheduled to be delivered in the 2018 timeframe and includes deployment of AA to Poland, another upgrade to the Aegis BMD Weapons System, and the SM-3 Block IIA variant (which is currently being cooperatively developed with Japan). With delivery of Phase III, EPAA will provide coverage for NATO territory in Europe and U.S. forces in that region.

Finally, MDA continues to develop spirals of Command, Control, Battle Management, and Communication (C2BMC) capability. In 2013, C2BMC capability supported the warfighter in real world operations across multiple areas of responsibility, including deployments to the Middle East, Turkey and Kwajalein.

International Cooperation

In 2013, MDA continued to expand missile defense cooperation with key friends and allies. MDA currently participates in missile defense-related projects and studies with over twenty countries and NATO. MDA will continue to work with NATO allies to develop requirements and further capabilities for regional defense.

Significant 2013 accomplishments and coordination activities with countries in the Middle East included:

- Continued execution of the United Arab Emirates' (UAE) THAAD Letter of Offer and Acceptance including the signing of an amendment responding to the UAE's request for additional interceptors and launchers;
- Continued to work with partners concerning their Letters of Request for the purchase of MDA systems; and
- Continued coordination with other Middle East countries through the Gulf Coordination Council to strengthen cooperation and determine common missile defense interests.

MDA continues its Cooperative Development Program with Israel for several BMD systems and to facilitate interoperability with the U.S. BMDS. Work continues under existing agreements for the Arrow Weapons System, David's Sling, and the Upper Tier Interceptor programs. Congressional support and funding was provided for FY2012-2015 for Israel's procurement of Iron Dome. MDA provided additional funding and negotiated (and signed in March 2014) a new agreement with Israel to provide further funding and ensure significant co-production opportunities for U.S. industry.

In Europe, MDA successfully supported negotiations to deploy BMD interceptor missiles in Romania and Poland for EPAA. The groundbreaking for the EPAA Phase II AA site in Romania took place in October 2013.

In the Asia-Pacific region, MDA continued to expand bilateral relationships with Australia, Japan, and the Republic of Korea (ROK). The MDA and the ROK successfully completed the second phase of their joint BMD architecture analysis.

MDA and Japan completed the second amendment to the SM-3 Block IIA Cooperative Development Program, conducted joint analysis of current and planned missile defense capabilities to inform Executive Steering Committee recommendations for the Japan 2014 Mid-Term Defense Program, and are conducting discussions on transitioning the SM-3 Block IIA from development to integration, test, and production. In addition, Japan furnished land to the U.S. Government for the installation of a second AN/TPY-2 Radar at Kyogamisaki which will enhance the Alliance's ability to defend Japan, our forward deployed forces, and the U.S. homeland from the ballistic missile threat posed by North Korea and will augment the capabilities of the existing radar located at Shariki.

Rigorous Testing

In 2013, MDA executed eight high-profile U.S.-only tests, as well as numerous ground tests, to validate BMD performance. MDA also participated in four additional Israeli flight tests. The capstone test event was Flight Test Operational (FTO) -01. This test was an unparalleled operational test of the layered BMD and involved THAAD and Aegis BMD, ground- and sea-based forward deployed sensors and C2BMC assets.

Aegis BMD testing achieved a five for five intercept test record and a successful transmission of long-range surveillance and track data through the BMD System (BMDS) C2BMC to the Ground-based Midcourse Defense (GMD) system. One of those successful Aegis BMD tests assessed the ability of launching an interceptor on data provided from the Space Tracking and Surveillance System (STSS) satellites. Several other successful Aegis BMD ground and flight tests validated the path forward toward approval of a full production decision for the Standard Missile (SM) -3 Block IB missile and certification of the Aegis BMD 4.0 weapon system.

Successful cooperative development testing with Israel included a second successful flight test intercept using the David's Sling Weapons System and a second successful fly-out of the Arrow-3 upper tier interceptor. These programmatic milestones provide confidence that Israel will have the capability to defeat the evolving ballistic missile threat in the Middle East.

Finally, MDA has expanded a partnership with OSD DOT&E to test and experiment with cyber security on MDA systems. This partnership leverages DOT&E resources and teams MDA with special cyber security expertise and extensive knowledge of the current cyber threats.

BMDS Technology Initiatives

MDA is developing and testing advanced discriminating sensor prototypes. Additionally, MDA is conducting system level trade studies to select capability options and determine the most cost-effective approach for inserting advanced sensors into the BMDS architecture. These sensors will improve precision tracking and discrimination capability to counter evolving threat countermeasures and significantly enhance the lethality of the BMDS.

The Directed Energy Program is building a foundation for the next generation high-energy laser by pursuing several promising lightweight, highly-efficient solid state laser technologies. These candidate technologies offer a path to high-efficiency, electrically-driven, compact, light-weight high-energy lasers for multiple missile defense applications.

MDA's strategy for the Next Generation Kill Vehicles is to achieve as much commonality among future GMD kill vehicles and other future kill vehicles for Aegis BMD and THAAD. The Common Kill Vehicle (CKV) Technology effort is aiding the Agency in establishing the requirements foundation for the redesigned GBI EKV, which MDA is now planning as Phase I of its overall kill vehicle strategy. MDA's joint government and industry concept definition effort will confirm the feasibility of industry to meet those requirements and enabling industry to develop and mature their concepts for a redesigned EKV that is much more reliable, producible, and testable. In the follow-on kill vehicle common technology efforts, or CKV Phase II, MDA will make investments that reduce the costs of production and weapon system operations through new kill vehicle architectures and scalable technology that improves the effectiveness and performance of MDA's entire interceptor fleet against an evolving threat. MDA's investments in large format focal plane arrays, smaller, more accurate inertial measurement units, improved communications architecture, and high performance propulsion components are key enablers. These technology development efforts will address another system gap; allowing the Agency to engage a more numerous and increasingly more complex threat, by establishing the technology foundation for killing multiple lethal objects from a single SM-3 or GBI.

The Agency's Advanced Research program capitalizes on the creativity and innovation of the Nation's universities and small business community to develop cutting-edge technologies through Small Business Innovation Research (SBIR) and University Engagement programs. MDA is implementing national security strategy through international cooperation with foreign universities of allied nations on research efforts beneficial to the BMDS. In 2013, the Advanced Research program made significant contributions in support of technology development and transition to

the BMDS by awarding 283 new SBIR contracts; six new university research efforts; three new Rapid Innovation Fund efforts; and initiating a research project with the Government of Denmark on Frequency Modulated Continuous Wave radars.

General

There are no significant software-related issues with the program at this time.

Program funding and production quantities listed in this SAR are consistent with the FY 2015 PB.

Threshold Breaches

APB Breaches

Schedule ☐

Performance ☐

Cost ☐

RDT&E ☐

Procurement ☐

MILCON ☐

Acq O&M ☐

O&S Cost ☐

Unit Cost ☐

PAUC ☐

APUC ☐

Nunn-McCurdy Breaches

Current UCR Baseline

PAUC None

APUC None

Original UCR Baseline

PAUC None

APUC None

Schedule

No schedule milestones exist for BMDS.

Memo

For schedule milestones see the Unclassified BMDS Accountability Report (BAR) and BAR Classified Annex dated March 18, 2014.

Performance

Memo

For performance characteristics see the Unclassified BMDS Accountability Report (BAR) and BAR Classified Annex dated March 18, 2014.

Track to Budget

General Memo

Reflects the latest budget structure for PB 2015.

RDT&E

| Appn | BA | PE | |
|--------------|---------|----|----------------------------------|
| Defense-Wide | 0400 | 04 | 0305103C |
| | Project | | Name |
| | MDCS | | Cyber Security Initiative |
| Defense-Wide | 0400 | 03 | 0603175C |
| | Project | | Name |
| | MD25 | | Advanced Technology |
| | MD40 | | Program Wide Support |
| | MD85 | | Common Kill Vehicle |
| Defense-Wide | 0400 | 03 | 0603176C |
| | Project | | Name |
| | MD40 | | Program-Wide Support |
| | MDXX | | Advanced Concepts |
| Defense-Wide | 0400 | 03 | 0603177C |
| | Project | | Name |
| | MD40 | | Program-Wide Support |
| | MD95 | | Discrimination Sensor Technology |
| Defense-Wide | 0400 | 03 | 0603178C |
| | Project | | Name |
| | MD40 | | Program-Wide Support |
| | MD69 | | Weapons Technology |
| Defense-Wide | 0400 | 03 | 0603180C |
| | Project | | Name |
| | MD25 | | Advanced Research |
| | MD40 | | Program-Wide Support |
| Defense-Wide | 0400 | 03 | 0603274C |
| | Project | | Name |

| | | | |
|------------------|----------------|---|--------------------------------------|
| | MD81 | | Special Programs - MDA Technology |
| Defense- Wide | 0400 | 03 | 0603294C |
| | Project | Name | |
| | MD40 | Program-Wide Support | |
| | MD85 | Common Kill Vehicle | |
| Defense- Wide | 0400 | 04 | 0603881C |
| | Project | Name | |
| | MC07 | BMDS Cyber Program | |
| | MD06 | Patriot Advanced Capability-3 (PAC-3) | |
| | MD07 | THAAD | |
| | MD40 | Program Wide Support | |
| | MT07 | THAAD Test | |
| Defense- Wide | 0400 | 04 | 0603882C |
| | Project | Name | |
| | MC08 | BMDS Cyber Program | |
| | MD08 | Ground Based Midcourse | |
| | MD40 | Program Wide Support | |
| | MD97 | Improved HLD Interceptors | |
| | MT08 | Ground Based Midcourse Test | |
| | MX08 | Ground Based Midcourse Development Support | |
| Defense- Wide | 0400 | 04 | 0603884C |
| | Project | Name | |
| | MC11 | BMDS Cyber Program | |
| | MD11 | BMDS Radars | |
| | MD40 | Program Wide Support | |
| | MD96 | Long Range Discriminating Radar | |
| | MT11 | BMDS Radars Test | |
| Defense- Wide | 0400 | 04 | 0603890C |
| | Project | Name | |
| | MC30 | BMDS Cyber Program | |
| | MC31 | BMDS Cyber Program | |
| | MD24 | Systems Engineering & Integration | |
| | MD28 | Intelligence & Security | |
| | MD30 | BMD Information Management Systems | |
| | MD31 | Modeling & Simulation | |

| | | | |
|--------------|----------------|----|--|
| | MD32 | | Quality, Safety, and Mission Assurance |
| | MD40 | | Program Wide Support |
| | MT23 | | Enabling - Test |
| Defense-Wide | 0400 | 04 | 0603891C |
| | Project | | Name |
| | MD27 | | Special Programs |
| Defense-Wide | 0400 | 04 | 0603892C |
| | Project | | Name |
| | MC09 | | BMDS Cyber Program |
| | MD09 | | Aegis BMD |
| | MD40 | | Program Wide Support |
| | MT09 | | Aegis BMD Test |
| | MX09 | | Aegis BMD Development Support |
| Defense-Wide | 0400 | 04 | 0603893C |
| | Project | | Name |
| | MD12 | | Space Tracking & Surveillance System (STSS) |
| | MD40 | | Program Wide Support |
| Defense-Wide | 0400 | 04 | 0603895C |
| | Project | | Name |
| | MD33 | | MD Space Exp Center (MDSEC) |
| | MD40 | | Program Wide Support |
| Defense-Wide | 0400 | 04 | 0603896C |
| | Project | | Name |
| | MC01 | | BMDS Cyber Program |
| | MD01 | | Command & Control, Battle Management, Communications (C2BMC) |
| | MD40 | | Program Wide Support |
| | MT01 | | C2BMC Test |
| | MX01 | | C2BMC Development Support |
| Defense-Wide | 0400 | 04 | 0603898C |
| | Project | | Name |
| | MD03 | | Joint Warfighter Support |
| | MD40 | | Program Wide Support |
| | MT03 | | Joint Warfighter Test Support |
| Defense-Wide | 0400 | 04 | 0603904C |

| | | | | |
|--------------|------|----|----------------|---|
| | | | Project | Name |
| | | | MC22 | BMDS Cyber Program |
| | | | MD22 | Missile Defense Integration & Operations Center (MDIOC) |
| | | | MD40 | Program Wide Support |
| Defense-Wide | 0400 | 04 | | 0603906C |
| | | | Project | Name |
| | | | MD35 | Regarding Trench |
| Defense-Wide | 0400 | 04 | | 0603907C |
| | | | Project | Name |
| | | | MD40 | Program Wide Support |
| | | | MX46 | Sea Based X-Band Radar Development Support |
| Defense-Wide | 0400 | 04 | | 0603913C |
| | | | Project | Name |
| | | | MD20 | Israeli Upper Tier |
| | | | MD26 | Israeli ARROW Program |
| | | | MD34 | Short Range Ballistic Missile Defense (SRBMD) |
| Defense-Wide | 0400 | 04 | | 0603914C |
| | | | Project | Name |
| | | | MC04 | BMDS Cyber Program |
| | | | MD40 | Program Wide Support |
| | | | MT04 | BMDS Test Program |
| | | | MX04 | BMD Test Development Support |
| Defense-Wide | 0400 | 04 | | 0603915C |
| | | | Project | Name |
| | | | MD40 | Program Wide Support |
| | | | MT05 | BMDS Targets Program |
| Defense-Wide | 0400 | 04 | | 0604880C |
| | | | Project | Name |
| | | | MC68 | Cyber Operations |
| | | | MD40 | Program-Wide Support |
| | | | MD68 | Aegis Ashore |
| | | | MT68 | Aegis Ashore Test |
| Defense-Wide | 0400 | 04 | | 0604881C |
| | | | Project | Name |
| | | | MD09 | SM-3 Block IIA Co-Development |

| | | | |
|--------------|----------------|----|------------------------------------|
| | MD40 | | Program-Wide Support |
| | MT09 | | SM-3 Block IIA Co-Development Test |
| Defense-Wide | 0400 | 04 | 0605502C |
| | Project | | Name |
| | MD45 | | Small Business Innovative Research |
| Defense-Wide | 0400 | 04 | 0901598C |
| | Project | | Name |
| | MD38 | | Management Headquarters |

Procurement

| Appn | BA | PE | |
|--------------|-----------|------------------------|----------|
| Defense-Wide | 0300 | 01 | 0208866C |
| | Line Item | Name | |
| | MD07 | THAAD | |
| | MD08 | Ground Based Midcourse | |
| | MD09 | Aegis BMD | |
| | MD11 | BMDS AN/TPY-2 Radars | |
| | MD73 | Aegis Ashore Phase III | |
| | MD78 | Aegis Spares | |
| | MD83 | Iron Dome | |

MILCON

| Appn | BA | PE |
|--------------|----------------|---------------------------------|
| Defense-Wide | 0500 | 0603882C |
| | Project | Name |
| | MD08 | Ground Based Midcourse |
| Defense-Wide | 0500 | 0603884C |
| | Project | Name |
| | MD11 | BMDS Radars |
| | MD96 | Long Range Discriminating Radar |
| Defense-Wide | 0500 | 0604880C |
| | Project | Name |
| | MD68 | Aegis Ashore |

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

| Appropriation | BY \$M | | | BY2002 \$M | TY \$M | | |
|----------------|--------------------------|------------------------------------|----|---------------------|--------------------------|--------------------------|---------------------|
| | SAR Baseline Plan Est | Current APB Objective/Threshold | | Current Estimate | SAR Baseline Plan Est | Current APB Objective | Current Estimate |
| RDT&E | 44740.1 | -- | -- | 103839.5 | 47217.1 | -- | 122377.6 |
| Procurement | 0.0 | -- | -- | 11475.0 | 0.0 | -- | 15097.9 |
| Flyaway | -- | -- | -- | 11475.0 | -- | -- | 15097.9 |
| Recurring | -- | -- | -- | 11475.0 | -- | -- | 15097.9 |
| Non Recurring | -- | -- | -- | 0.0 | -- | -- | 0.0 |
| Support | -- | -- | -- | 0.0 | -- | -- | 0.0 |
| Other Support | -- | -- | -- | 0.0 | -- | -- | 0.0 |
| Initial Spares | -- | -- | -- | 0.0 | -- | -- | 0.0 |
| MILCON | 0.0 | -- | -- | 854.3 | 0.0 | -- | 1123.8 |
| Acq O&M | 0.0 | -- | -- | 0.0 | 0.0 | -- | 0.0 |
| Total | 44740.1 | -- | -- | 116168.8 | 47217.1 | -- | 138599.3 |

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual BMDS Accountability Report (BAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The BAR includes unit cost baselines for key assets (e.g. Ground-Based Interceptors and AN/TPY-2 radars) comprising the BMDS.

| Quantity | SAR Baseline Plan Est | Current APB | Current Estimate |
|-------------|--------------------------|-------------|------------------|
| RDT&E | 0 | 0 | 0 |
| Procurement | 0 | 0 | 0 |
| Total | 0 | 0 | 0 |

Quantities of Key BMDS Assets (grouped by appropriation, total buys from FY 2002-2019)

| <u>Program</u> | <u>Component</u> | <u>RDT&E</u> | <u>Procurement</u> |
|---|----------------------------------|------------------|--------------------|
| Terminal High Altitude Area Defense (THAAD) | Batteries | 2 | 5 |
| | Interceptors | 50 | 318 |
| Aegis | SM-3 Block I/IA Interceptors | 95 | 55 |
| | SM-3 Block IB Interceptors | 21 | 311 |
| Ground Based Midcourse Defense | Ground Based Interceptors (GBIs) | 58 | 8 |
| Sensors | AN/TPY-2 Radars | 7 | 5 |

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

| Appropriation | Prior | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | To Complete | Total |
|---------------|---------|--------|--------|--------|--------|--------|--------|-------------|----------|
| RDT&E | 90605.1 | 5537.2 | 5583.2 | 5549.9 | 5326.1 | 4985.1 | 4791.0 | 0.0 | 122377.6 |
| Procurement | 4924.5 | 1560.2 | 1418.6 | 1610.4 | 1783.2 | 1836.2 | 1964.8 | 0.0 | 15097.9 |
| MILCON | 407.5 | 177.1 | 40.7 | 239.6 | 95.6 | 94.6 | 68.7 | 0.0 | 1123.8 |
| Acq O&M | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PB 2015 Total | 95937.1 | 7274.5 | 7042.5 | 7399.9 | 7204.9 | 6915.9 | 6824.5 | 0.0 | 138599.3 |
| PB 2014 Total | 95970.1 | 7427.7 | 7549.4 | 7141.7 | 6992.9 | 7064.9 | 0.0 | 0.0 | 132146.7 |
| Delta | -33.0 | -153.2 | -506.9 | 258.2 | 212.0 | -149.0 | 6824.5 | 0.0 | 6452.6 |

| Quantity | Undistributed | Prior | FY2014 | FY2015 | FY2016 | FY2017 | FY2018 | FY2019 | To Complete | Total |
|---------------|---------------|-------|--------|--------|--------|--------|--------|--------|-------------|-------|
| Development | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Production | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PB 2015 Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PB 2014 Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delta | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

0400 | RDT&E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|-----------------------------------|---------------------------------------|------------------------------|----------------------|----------------------|----------------------|
| 2002 | -- | -- | -- | -- | -- | -- | 6618.8 |
| 2003 | -- | -- | -- | -- | -- | -- | 6446.3 |
| 2004 | -- | -- | -- | -- | -- | -- | 7566.8 |
| 2005 | -- | -- | -- | -- | -- | -- | 8826.7 |
| 2006 | -- | -- | -- | -- | -- | -- | 7690.2 |
| 2007 | -- | -- | -- | -- | -- | -- | 9381.3 |
| 2008 | -- | -- | -- | -- | -- | -- | 8655.3 |
| 2009 | -- | -- | -- | -- | -- | -- | 8415.3 |
| 2010 | -- | -- | -- | -- | -- | -- | 6947.3 |
| 2011 | -- | -- | -- | -- | -- | -- | 7406.4 |
| 2012 | -- | -- | -- | -- | -- | -- | 6798.9 |
| 2013 | -- | -- | -- | -- | -- | -- | 5851.8 |
| 2014 | -- | -- | -- | -- | -- | -- | 5537.2 |
| 2015 | -- | -- | -- | -- | -- | -- | 5583.2 |
| 2016 | -- | -- | -- | -- | -- | -- | 5549.9 |
| 2017 | -- | -- | -- | -- | -- | -- | 5326.1 |
| 2018 | -- | -- | -- | -- | -- | -- | 4985.1 |
| 2019 | -- | -- | -- | -- | -- | -- | 4791.0 |
| Subtotal | -- | -- | -- | -- | -- | -- | 122377.6 |

Annual Funding BY\$

0400 | RDT&E | Research, Development, Test, and Evaluation, Defense-Wide

| Fiscal Year | Quantity | End Item Recurring Flyaway BY 2002 \$M | Non End Item Recurring Flyaway BY 2002 \$M | Non Recurring Flyaway BY 2002 \$M | Total Flyaway BY 2002 \$M | Total Support BY 2002 \$M | Total Program BY 2002 \$M |
|-----------------|----------|---|--|--|---------------------------------|---------------------------------|---------------------------------|
| 2002 | -- | -- | -- | -- | -- | -- | 6567.6 |
| 2003 | -- | -- | -- | -- | -- | -- | 6295.8 |
| 2004 | -- | -- | -- | -- | -- | -- | 7214.0 |
| 2005 | -- | -- | -- | -- | -- | -- | 8158.5 |
| 2006 | -- | -- | -- | -- | -- | -- | 6910.1 |
| 2007 | -- | -- | -- | -- | -- | -- | 8230.7 |
| 2008 | -- | -- | -- | -- | -- | -- | 7454.4 |
| 2009 | -- | -- | -- | -- | -- | -- | 7158.3 |
| 2010 | -- | -- | -- | -- | -- | -- | 5820.5 |
| 2011 | -- | -- | -- | -- | -- | -- | 6087.8 |
| 2012 | -- | -- | -- | -- | -- | -- | 5498.5 |
| 2013 | -- | -- | -- | -- | -- | -- | 4660.2 |
| 2014 | -- | -- | -- | -- | -- | -- | 4338.1 |
| 2015 | -- | -- | -- | -- | -- | -- | 4295.4 |
| 2016 | -- | -- | -- | -- | -- | -- | 4187.7 |
| 2017 | -- | -- | -- | -- | -- | -- | 3940.0 |
| 2018 | -- | -- | -- | -- | -- | -- | 3615.3 |
| 2019 | -- | -- | -- | -- | -- | -- | 3406.6 |
| Subtotal | -- | -- | -- | -- | -- | -- | 103839.5 |

Annual Funding TY\$

0300 | Procurement | Procurement, Defense-Wide

| Fiscal Year | Quantity | End Item Recurring Flyaway TY \$M | Non End Item Recurring Flyaway TY \$M | Non Recurring Flyaway TY \$M | Total Flyaway TY \$M | Total Support TY \$M | Total Program TY \$M |
|-----------------|----------|--|---|---------------------------------------|----------------------------|----------------------------|----------------------------|
| 2009 | -- | -- | 206.6 | -- | 206.6 | -- | 206.6 |
| 2010 | -- | -- | 835.7 | -- | 835.7 | -- | 835.7 |
| 2011 | -- | -- | 1070.8 | -- | 1070.8 | -- | 1070.8 |
| 2012 | -- | -- | 1347.2 | -- | 1347.2 | -- | 1347.2 |
| 2013 | -- | -- | 1464.2 | -- | 1464.2 | -- | 1464.2 |
| 2014 | -- | -- | 1560.2 | -- | 1560.2 | -- | 1560.2 |
| 2015 | -- | -- | 1418.6 | -- | 1418.6 | -- | 1418.6 |
| 2016 | -- | -- | 1610.4 | -- | 1610.4 | -- | 1610.4 |
| 2017 | -- | -- | 1783.2 | -- | 1783.2 | -- | 1783.2 |
| 2018 | -- | -- | 1836.2 | -- | 1836.2 | -- | 1836.2 |
| 2019 | -- | -- | 1964.8 | -- | 1964.8 | -- | 1964.8 |
| Subtotal | -- | -- | 15097.9 | -- | 15097.9 | -- | 15097.9 |

Annual Funding BY\$

0300 | Procurement | Procurement, Defense-Wide

| Fiscal Year | Quantity | End Item Recurring Flyaway BY 2002 \$M | Non End Item Recurring Flyaway BY 2002 \$M | Non Recurring Flyaway BY 2002 \$M | Total Flyaway BY 2002 \$M | Total Support BY 2002 \$M | Total Program BY 2002 \$M |
|-----------------|----------|---|--|--|---------------------------------|---------------------------------|---------------------------------|
| 2009 | -- | -- | 174.2 | -- | 174.2 | -- | 174.2 |
| 2010 | -- | -- | 694.2 | -- | 694.2 | -- | 694.2 |
| 2011 | -- | -- | 872.5 | -- | 872.5 | -- | 872.5 |
| 2012 | -- | -- | 1080.4 | -- | 1080.4 | -- | 1080.4 |
| 2013 | -- | -- | 1155.7 | -- | 1155.7 | -- | 1155.7 |
| 2014 | -- | -- | 1210.4 | -- | 1210.4 | -- | 1210.4 |
| 2015 | -- | -- | 1080.1 | -- | 1080.1 | -- | 1080.1 |
| 2016 | -- | -- | 1202.3 | -- | 1202.3 | -- | 1202.3 |
| 2017 | -- | -- | 1305.2 | -- | 1305.2 | -- | 1305.2 |
| 2018 | -- | -- | 1317.7 | -- | 1317.7 | -- | 1317.7 |
| 2019 | -- | -- | 1382.3 | -- | 1382.3 | -- | 1382.3 |
| Subtotal | -- | -- | 11475.0 | -- | 11475.0 | -- | 11475.0 |

Annual Funding TY\$
0500 | MILCON | Military Construction,
Defense-Wide

| Fiscal Year | Total Program TY \$M |
|------------------------|-------------------------------------|
| 2002 | 8.2 |
| 2003 | 24.9 |
| 2004 | 24.4 |
| 2005 | 22.3 |
| 2006 | 4.9 |
| 2007 | -- |
| 2008 | -- |
| 2009 | 18.3 |
| 2010 | 98.7 |
| 2011 | -- |
| 2012 | 67.1 |
| 2013 | 138.7 |
| 2014 | 177.1 |
| 2015 | 40.7 |
| 2016 | 239.6 |
| 2017 | 95.6 |
| 2018 | 94.6 |
| 2019 | 68.7 |
| Subtotal | 1123.8 |

Annual Funding BY\$
0500 | MILCON | Military Construction,
Defense-Wide

| Fiscal Year | Total Program BY 2002 \$M |
|------------------------|--|
| 2002 | 8.0 |
| 2003 | 23.7 |
| 2004 | 22.6 |
| 2005 | 20.1 |
| 2006 | 4.3 |
| 2007 | -- |
| 2008 | -- |
| 2009 | 15.2 |
| 2010 | 80.1 |
| 2011 | -- |
| 2012 | 52.7 |
| 2013 | 107.0 |
| 2014 | 134.2 |
| 2015 | 30.2 |
| 2016 | 174.5 |
| 2017 | 68.3 |
| 2018 | 66.2 |
| 2019 | 47.2 |
| Subtotal | 854.3 |

Low Rate Initial Production

There is no LRIP for this Program.

Foreign Military Sales

| Country | Date of Sale | Quantity | Total Cost \$M | Memo |
|----------------------|--------------|----------|----------------|--|
| Japan | 8/5/2013 | 0 | 7.5 | FMS Case JA-P-FTZ: SM-3 SCD Propulsion Test Vehicle / Control Test Vehicle Test Execution. No major deliveries. |
| Japan | 11/5/2012 | 0 | 2.0 | FMS Case JA-P-FUE: Standard Missile-3 (SM-3) Cooperative Development (SCD) Insensitive Munitions Testing. No major deliveries. |
| Japan | 9/27/2012 | 0 | 2.0 | FMS Case JA-P-FUD: SM-3 SCD Ground Flight Testing. No major deliveries. |
| United Arab Emirates | 12/25/2011 | 2 | 4904.8 | FMS Case AE-B-UAF, Two THAAD Batteries, consisting of 192 interceptors, 2 AN/TPY-2 Radars, 12 Launchers, 8 Missile Round Pallets, 7 MIDS Terminals, 4 AMMPS, 10 PR4G TRC-9105 Radios, 6 PR4G TRC-9301C Radios, various tactical vehicles, trucks, training aids & devices, spare parts, training, government and contractor technical assistance, books & publications, and repair & return. |
| United Arab Emirates | 4/30/2010 | 0 | 13.8 | FMS Case AE-B-UAE, Technical Assistance & Site Survey. Deliveries: no major deliveries. |
| Japan | 3/22/2010 | 2 | 20.0 | FMS Case JA-P-FON: SM-3 BLK IA Spares and Return, Repair, Re-Shipment (RRR). Deliveries: SM-3 Kinetic Warhead (KW); MK72 Rocket Booster Motor. |
| Japan | 1/15/2010 | 0 | 8.0 | FMS Case JA-P-FPX: Japan Hardware in the Loop (HWIL). No major deliveries. |
| Japan | 11/19/2008 | 0 | 21.0 | FMS Case JA-P-CAM: Japan Computer Program Test Site JABMD Upgrade. No major deliveries. |
| Japan | 9/11/2008 | 0 | 12.0 | FMS Case JA-P-FQV: SM-3 BLK IA Spares. No major deliveries. |
| Japan | 8/19/2008 | 0 | 59.0 | FMS Case JA-P-CAN: JS KIRISHIMA (DDG 174) Firing Event. No major deliveries. |
| Japan | 3/3/2008 | 9 | 202.0 | FMS Case JA-P-LWA: Japan Aegis BMD Block 2004 Upgrade of JS KIRISHIMA (DDG 174). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles. |
| Japan | 1/18/2008 | 0 | 53.0 | FMS Case JA-P-CAE: JS MYOKO (DDG 175) Firing Event. No major deliveries. |
| Netherlands | 8/31/2006 | 0 | 7.0 | FMS Case NE-P-GLK: Participation in ABMD Test Events and NATO BMD Trade Studies. No major deliveries. |
| Japan | 8/21/2006 | 0 | 56.0 | FMS Case JA-P-BIR: JS CHOKAI (DDG 176) Firing Event. No major deliveries. |

| | | | | |
|-------------|------------|---|-------|--|
| Japan | 8/21/2006 | 9 | 209.0 | FMS Case JA-P-LVK: Japan Aegis BMD Block 2004 Upgrade of JS MYOKO (DDG 175). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles. |
| Japan | 10/12/2005 | 9 | 167.0 | FMS Case JA-P-LUX: Japan Aegis BMD Block 2004 Upgrade of JS CHOKAI (DDG 176). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles. |
| Japan | 8/17/2004 | 9 | 309.0 | FMS Case JA-P-LUH, Japan Aegis BMD Block 2004 Upgrade of JS KONGO (DDG 173). Deliveries: 1 JBMD BLK 04 Computer Program, Peripherals, and SM-3 BLK IA Missiles. |
| Netherlands | 9/28/2000 | 0 | 4.0 | FMS Case NE-P-GJS: Theater Ballistic Missile Defense Concept Validation Phase. No major deliveries. |

Nuclear Costs

None

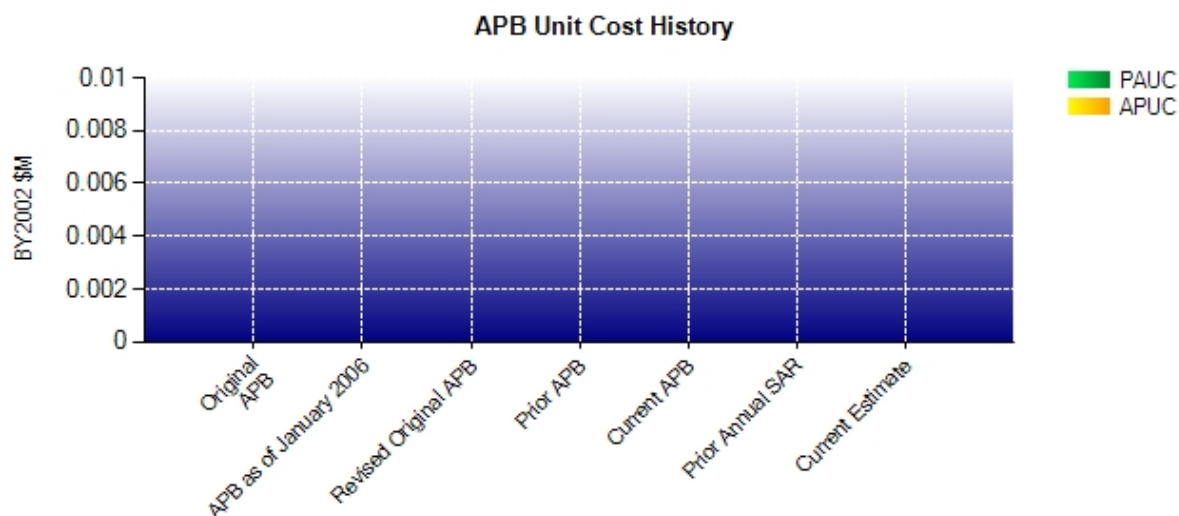
Unit Cost

Unit Cost Report

| | BY2002 \$M | BY2002 \$M | |
|--------------------------------------|-------------------------|------------------------------------|----------------|
| Unit Cost | Current UCR Baseline | Current Estimate (DEC 2013 SAR) | BY % Change |
| Program Acquisition Unit Cost (PAUC) | | | |
| Cost | -- | 116168.8 | |
| Quantity | -- | 0 | |
| Unit Cost | -- | -- | -- |
| Average Procurement Unit Cost (APUC) | | | |
| Cost | -- | 11475.0 | |
| Quantity | -- | 0 | |
| Unit Cost | -- | -- | -- |

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual BMDS Accountability Report (BAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The BAR includes unit cost baselines for key assets (e.g. Ground-Based Interceptors and AN/TPY-2 radars) comprising the BMDS.

Unit Cost History



| | Date | BY2002 \$M | | TY \$M | |
|------------------------|----------|------------|------|--------|------|
| | | PAUC | APUC | PAUC | APUC |
| Original APB | N/A | N/A | N/A | N/A | N/A |
| APB as of January 2006 | N/A | N/A | N/A | N/A | N/A |
| Revised Original APB | N/A | N/A | N/A | N/A | N/A |
| Prior APB | N/A | N/A | N/A | N/A | N/A |
| Current APB | N/A | N/A | N/A | N/A | N/A |
| Prior Annual SAR | DEC 2012 | N/A | N/A | N/A | N/A |
| Current Estimate | DEC 2013 | N/A | N/A | N/A | N/A |

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

| Initial PAUC Plan Est | Changes | | | | | | | | PAUC Current Est |
|--------------------------|---------|-----|-----|-----|-----|-----|-----|-------|---------------------|
| | Econ | Qty | Sch | Eng | Est | Oth | Spt | Total | |
| 0.000 | -- | -- | -- | -- | -- | -- | -- | -- | 0.000 |

PAUC Unit Cost History is not available: No Initial PAUC Estimate calculated due to lack of defined quantities.

Current SAR Baseline to Current Estimate (TY \$M)

| Initial APUC Plan Est | Changes | | | | | | | | APUC Current Est |
|--------------------------|---------|-----|-----|-----|-----|-----|-----|-------|---------------------|
| | Econ | Qty | Sch | Eng | Est | Oth | Spt | Total | |
| 0.000 | -- | -- | -- | -- | -- | -- | -- | -- | 0.000 |

APUC Unit Cost History is not available: No Initial APUC Estimate calculated due to lack of defined quantities.

SAR Baseline History

| Item/Event | SAR Planning Estimate (PE) | SAR Development Estimate (DE) | SAR Production Estimate (PdE) | Current Estimate |
|-----------------------------|----------------------------------|-------------------------------------|-------------------------------------|---------------------|
| Milestone A | N/A | N/A | N/A | N/A |
| Milestone B | N/A | N/A | N/A | N/A |
| Milestone C | N/A | N/A | N/A | N/A |
| IOC | N/A | N/A | N/A | N/A |
| Total Cost (TY \$M) | 47217.1 | N/A | N/A | 138599.3 |
| Total Quantity | 0 | N/A | N/A | 0 |
| Prog. Acq. Unit Cost (PAUC) | N/A | N/A | N/A | N/A |

Cost Variance

| Summary Then Year \$M | | | | |
|------------------------------|------------------|-------------|---------------|--------------|
| | RDT&E | Proc | MILCON | Total |
| SAR Baseline (Plan Est) | 47217.1 | -- | -- | 47217.1 |
| Previous Changes | | | | |
| Economic | +1922.1 | +206.5 | -5.4 | +2123.2 |
| Quantity | -- | -- | -- | -- |
| Schedule | -1684.3 | -124.7 | -- | -1809.0 |
| Engineering | +48253.2 | -1296.1 | -31.8 | +46925.3 |
| Estimating | -9086.6 | -911.4 | +842.3 | -9155.7 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | +39404.4 | -2125.7 | +805.1 | +38083.8 |
| Current Changes | | | | |
| Economic | -337.8 | -85.0 | -7.5 | -430.3 |
| Quantity | -- | -- | -- | -- |
| Schedule | -- | -- | -- | -- |
| Engineering | +1462.2 | -- | -- | +1462.2 |
| Estimating | -1800.6 | +208.6 | +188.2 | -1403.8 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | -676.2 | +123.6 | +180.7 | -371.9 |
| Adjustments | +36432.3 | +17100.0 | +138.0 | +53670.3 |
| Total Changes | +75160.5 | +15097.9 | +1123.8 | +91382.2 |
| CE - Cost Variance | 122377.6 | 15097.9 | 1123.8 | 138599.3 |
| CE - Cost & Funding | 122377.6 | 15097.9 | 1123.8 | 138599.3 |

| Summary Base Year 2002 \$M | | | | |
|----------------------------|----------|----------|--------|----------|
| | RDT&E | Proc | MILCON | Total |
| SAR Baseline (Plan Est) | 44740.1 | -- | -- | 44740.1 |
| Previous Changes | | | | |
| Economic | -- | -- | -- | -- |
| Quantity | -- | -- | -- | -- |
| Schedule | -1417.0 | -91.5 | -- | -1508.5 |
| Engineering | +40930.6 | -977.2 | -24.3 | +39929.1 |
| Estimating | -7644.4 | -727.1 | +648.5 | -7723.0 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | +31869.2 | -1795.8 | +624.2 | +30697.6 |
| Current Changes | | | | |
| Economic | -- | -- | -- | -- |
| Quantity | -- | -- | -- | -- |
| Schedule | -- | -- | -- | -- |
| Engineering | +1095.7 | -- | -- | +1095.7 |
| Estimating | -1365.0 | +169.6 | +130.9 | -1064.5 |
| Other | -- | -- | -- | -- |
| Support | -- | -- | -- | -- |
| Subtotal | -269.3 | +169.6 | +130.9 | +31.2 |
| Adjustments | +27499.5 | +13101.2 | +99.2 | +40699.9 |
| Total Changes | +59099.4 | +11475.0 | +854.3 | +71428.7 |
| CE - Cost Variance | 103839.5 | 11475.0 | 854.3 | 116168.8 |
| CE - Cost & Funding | 103839.5 | 11475.0 | 854.3 | 116168.8 |

Previous Estimate: December 2012

Cost Variance Memo

| Adjustments | Then-Year \$M | | | | Base-Year \$M | | | |
|--------------|-----------------|-----------------|--------------|-----------------|-----------------|-----------------|-------------|-----------------|
| | RDT&E | PROC | MILCON | TOTAL | RDT&E | PROC | MILCON | TOTAL |
| Dec 2009 SAR | 14,302.0 | 9,520.3 | 38.1 | 23,860.4 | 11,204.2 | 7,582.5 | 29.4 | 18,816.1 |
| Dec 2010 SAR | 6,279.4 | 2,191.1 | 10.1 | 8,480.6 | 4,805.2 | 1,662.4 | 7.6 | 6,475.2 |
| Dec 2011 SAR | 5,895.6 | 1,533.8 | 10.5 | 7,439.9 | 4,368.4 | 1,126.6 | 7.6 | 5,502.6 |
| Dec 2012 SAR | 5,164.3 | 1,890.0 | 10.6 | 7,064.9 | 3,715.1 | 1,347.4 | 7.4 | 5,069.9 |
| Dec 2013 SAR | 4,791.0 | 1,964.8 | 68.7 | 6,824.5 | 3,406.6 | 1,382.3 | 47.2 | 4,836.1 |
| Total | 36,432.3 | 17,100.0 | 138.0 | 53,670.3 | 27,499.5 | 13,101.2 | 99.2 | 40,699.9 |

| RDT&E | \$M | |
|--|------------------|------------------|
| | Base Year | Then Year |
| Current Change Explanations | | |
| Revised escalation indices. (Economic) | N/A | -337.8 |
| Adjustment for current and prior escalation. (Estimating) | +105.5 | +132.7 |
| Ground Based Midcourse sustainment transferred to Operations & Maintenance (Estimating) | -574.8 | -763.0 |
| Reduction resulting from test cost efficiencies and other test adjustments (Estimating) | -454.0 | -614.8 |
| FY 2013 sequestration reduction impacting BMDS system development (Estimating) | -400.0 | -502.2 |
| Reduced technology efforts but reoriented to focus on high payoff technology to keep pace with threat (Estimating) | -281.0 | -357.2 |
| Special Programs adjustments (Estimating) | -87.8 | -115.9 |
| Consolidation of management headquarters (Estimating) | -10.0 | -13.1 |
| Initiated redesign of Exoatmospheric Kill Vehicle (Engineering) | +542.1 | +725.0 |
| Congressional increase to Israeli programs (Estimating) | +281.8 | +356.9 |
| Incorporation of Long Range Discrimination Radar for Homeland Defense (Engineering) | +359.6 | +484.2 |
| Discrimination improvements for Homeland Defense (Engineering) | +194.0 | +253.0 |
| Refined cost estimates and other adjustments (Estimating) | +55.3 | +76.0 |
| RDT&E Subtotal | -269.3 | -676.2 |

| Procurement | \$M | |
|---|------------------|------------------|
| | Base Year | Then Year |
| Current Change Explanations | | |
| Revised escalation indices. (Economic) | N/A | -85.0 |
| Adjustment for current and prior escalation. (Estimating) | +23.9 | +30.3 |
| Reduction of Aegis SM-3 Block IB interceptors (Estimating) | -254.4 | -344.5 |
| FY 2013 sequestration reduction resulting in impacts to BMDS subsystems (Estimating) | -104.7 | -132.7 |
| FY 2013 Congressional increase for Iron Dome (Estimating) | +166.5 | +211.0 |
| FY 2013 Congressional increase for an additional AN/TPY-2 radar, radar spares, and other adjustments (Estimating) | +160.4 | +204.0 |
| Increase for THAAD interceptors and ground components for additional battery (Estimating) | +139.0 | +187.8 |
| Refined cost estimates and other adjustments (Estimating) | +38.9 | +52.7 |
| Procurement Subtotal | +169.6 | +123.6 |

| MILCON | \$M | |
|---|------------------|------------------|
| | Base Year | Then Year |
| Current Change Explanations | | |
| Revised escalation indices. (Economic) | N/A | -7.5 |
| Adjustment for current and prior escalation. (Estimating) | +4.3 | +5.6 |
| Congressional reductions to Aegis Ashore site in Romania (Estimating) | -55.8 | -72.9 |
| FY 2013 sequestration reduction and other adjustments (Estimating) | -7.7 | -9.9 |

| | | |
|---|--------|--------|
| Facilities construction for Long Range Discrimination Radar site for Homeland Defense (Estimating) | +190.1 | +265.4 |
| MILCON Subtotal | +130.9 | +180.7 |

Contracts

Appropriation: RDT&E

| | |
|-----------------------|---|
| Contract Name | Targets and Countermeasures Prime Contract |
| Contractor | Lockheed Martin Corporation Space Systems Company |
| Contractor Location | Huntsville, AL 35806 |
| Contract Number, Type | HQ0006-04-D-0006, CPAF |
| Award Date | December 09, 2003 |
| Definitization Date | April 19, 2004 |

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 210.7 | N/A | N/A | 2483.2 | N/A | N/A | 2343.4 | 2359.0 |

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to evolving BMDS test requirements. These requirements, documented through semi-annual changes to the Integrated Master Test Plan, drive modifications to the Targets and Countermeasures Lockheed Martin Prime Contract.

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | -92.3 | -10.3 |
| Previous Cumulative Variances | -76.0 | -34.7 |
| Net Change | -16.3 | +24.4 |

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to the following:

- Continued positive variances on DO-27 Medium Range Ballistic Missile (MRBM) T3; DO-30 Foreign Military Asset (FMA) and Services Support programs of \$6.7M. Recovery of negative CY12 cost variance on Delivery Order (DO) 29 Modified Ballistic Reentry Vehicle (MBRV) -8 program, change of \$3.2M. Previous cost variances on DO-22 Extended Medium Range Ballistic Missile (eMRBM) and Launch Vehicle (LV) 2 programs; DO-29 MBRV-7 program; and DO-29 task orders were maintained with little additional cost deterioration, change of -\$9.2M. Net cost variance change across multiple program efforts of -\$0.7M.
- Negative variances in DO-29 MBRV-5 program were realized due to multiple variance drivers related to Avionics Control Module (ACM), Critical Design Review (CDR) and post CDR required design changes. Negative CY cost variance of -\$17.0M.

The favorable net change in the schedule variance is due to the following:

- Recovery of negative Calendar Year (CY) 12 cost variance on DO-22 eMRBM program efforts. Previous behind schedule position was due to late hardware deliveries in Support Equipment and Avionics Control Module areas. All components have now been delivered.
- As of January 2014, minimal negative schedule variance remains and it covers multiple program efforts:
 - DO-22 eMRBM/LV2 -\$3.0M
 - DO-27 MRBM T3 -\$1.4M
 - DO-29 MBRV-5, MBRV-7 and MBRV-8 -\$5.3M
 - DO-30 FMA -\$0.2M
 - DO-23, 24, 25 Services Support -\$0.4M.

Contract Comments

The following actions have added scope to this contract over the course of CY 2013:

| Delivery Order | Amount | Description |
|---|-----------------|------------------|
| 022 - Hardware | \$45.2M | Additional scope |
| 024 – Mission Planning & Program Management | \$2.1M | Additional scope |
| 025 – Launch Activities | \$7.4M | Additional scope |
| 027 – Medium Range Ballistic Missile (MRBM) T-3 | \$6.7M | Additional scope |
| 029 – Re-Entry Vehicles | \$107.7M | Additional scope |
| Total | \$169.1M | |

Appropriation: RDT&E

| | |
|-----------------------|---|
| Contract Name | Development and Sustainment Contract |
| Contractor | The Boeing, Co., Missile Defense Systems |
| Contractor Location | Huntsville, AL 35806 |
| Contract Number, Type | HQ0147-12-C-0004, CR/CPFF/CPIF/CPAF/FPIF |
| Award Date | December 30, 2011 |
| Definitization Date | December 30, 2011 |

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 2816.8 | N/A | N/A | 3253.2 | N/A | N/A | 3316.0 | 3316.0 |

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the following contract actions:

2012

- Options Exercised: Clear Radar Integration and Development; Cape Cod Radar Integration and Development; Distributed Multi-echelon Training System (DMETS) Support.
- Engineering Change Proposals (ECPs): Additional Warfighter Training; Capability Enhancement (CE) II Exo-atmospheric Kill Vehicle (EKV) Software for Flight Test Ground-Based Interceptor (FTG-06b); CE-I FTG-07 execution.
- Task Instructions: Signature Measurement Test Article; Ground-Based Interceptor (GBI) Probabilistic Risk Assessment; Integrated System Test Capability (ISTC 2) BMDS Integrated Lab Concept and associated extension; BMDS System Specifications; Shoot Assess Shoot (SAS); In-flight Interceptor Communications System (IFICS) Data Terminal Technical Refresh; Increment 2 Probabilistic Risk Assessment (PRA) approach for GBI.

2013

- Options Exercised: Manufacture of Operational Interceptors; DMETS Support.
- ECPs: Joint Ground-Based Midcourse Defense Training and Exercise Center (JGTEC) Relocation; Conversion of Launch Facility (LF23) Switch Hitter; Boeing High Frequency Test Bed (HFTB) Support to Common Inertial Measurement Unit (IMU) Low Noise (LN200) Development; CE-11 Upgrade; and Alternate Divert Thruster Phase IV.
- Task Instructions: EKV Design Turn Options; GBI Fleet Reliability Assessment Training; Independent Fleet Assessment; FTG-07 Separation Identification for EKV; GBI EKV Laser Initiation Device for Service Life Extension (SLE); Stockpile Reliability Program (SRP) Asset #1 Phase 2; Peterson Air Force Base (PAFB) NORAD & U.S. Northern Command (N-NC) Bldg 2; Arm/Disarm Switch Diode; and Installation of Encryption Keys.

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | -6.8 | -43.4 |
| Previous Cumulative Variances | +6.6 | -15.1 |
| Net Change | -13.4 | -28.3 |

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to more effort than planned for integrating DSC with the MDA Integrated Master Test Plan (IMTP); delayed Ground Systems (GS) Preliminary Design Review/Critical Design Review (PDR/CDR) for the Configuration 2 (C2) GBI and Non-Tactical Equipment (NTE) upgrades; MDA directed delay in FTG-06b resulting in the reallocation of resources to support Ground Test Integrated (GTI-04e) test planning tasks and additional proposal preparation effort required for numerous ECPs.

The unfavorable net change in the schedule variance is due to delayed GBI Upgrades, Fleet Maintenance, Materials and Spares; Ground and Flight Test Slips; delays in GBI Regulator Qualification Testing, IMU Characterization and Booster Stack non-significant Material; late Engineering Design Reviews, Material (Sunshade, Divert Attitude Control System (DACS) and Harnesses) and Consolidated Booster Avionics Upgrade (CBAU) Software, Mechanical/Propulsion Engineering.

Appropriation: RDT&E

| | |
|-----------------------|---|
| Contract Name | SM-3 Technology Development of Production Missiles |
| Contractor | Raytheon Missile Systems |
| Contractor Location | Tucson, AZ 85701 |
| Contract Number, Type | N00024-07-C-6119, CPIF |
| Award Date | May 14, 2007 |
| Definitization Date | February 15, 2008 |

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 146.9 | N/A | N/A | 1543.0 | N/A | N/A | 1405.0 | 1430.0 |

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of additional Missile Development Contract Line Item Numbers (CLINs).

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | -13.0 | -36.0 |
| Previous Cumulative Variances | -14.0 | -15.0 |
| Net Change | +1.0 | -21.0 |

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to completion of the supplier's manufacture readiness effort.

The unfavorable net change in the schedule variance is due to corrective actions for the Third Stage Rocket Motor (TSRM) energetic event. Utilization of Labor to complete the first lot of IB units slowed planned effort on subsequent missile deliveries. Actions have completed and deliveries are getting back on track-verified at recent Integrated Baseline Review.

Appropriation: RDT&E

Contract Name **Block IIA AUR Development & Integration**
 Contractor Raytheon Company
 Contractor Location 1151 E Hermans Rd
 Tucson, AZ 85756
 Contract Number, Type HQ0276-10-C-0005, CPIF/CPAF
 Award Date September 08, 2010
 Definitization Date September 08, 2010

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 160.0 | N/A | N/A | 1442.0 | N/A | N/A | 1462.0 | 1472.0 |

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of additional Missile Development effort.

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | -41.0 | -26.0 |
| Previous Cumulative Variances | -3.0 | -16.0 |
| Net Change | -38.0 | -10.0 |

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to additional effort and resources required to support Guidance Electronics Unit (GEU) Circuit Card Assembly (CCA) Pre-Production designs, and Actuation System & Avionics efforts at Aerojet.

The unfavorable net change in the schedule variance is due to delayed completion of Guidance Section Production CCAs and Kinetic Warhead (KW) Inertial Measurement Unit (IMU) efforts, caused in part by delayed material deliveries.

Contract Comments

This is the second year reporting the Raytheon Aegis Ballistic Missile Defense effort for the SM-3 Block IIA in the Missile Defense Agency SAR submission.

Appropriation: RDT&E

| | |
|-----------------------|--|
| Contract Name | SM-3 Technology Development of Block IB/IA Missiles |
| Contractor | Raytheon Missile Systems |
| Contractor Location | Tucson, AZ 85756 |
| Contract Number, Type | HQ0276-11-C-0002, CPAF |
| Award Date | January 15, 2011 |
| Definitization Date | March 15, 2011 |

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 594.0 | N/A | N/A | 671.0 | N/A | N/A | 658.0 | 664.0 |

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to Flight Test Support, continued verification of technology insertion, discrimination improvement and service life extension to September 30, 2015.

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | +5.0 | -3.0 |
| Previous Cumulative Variances | -1.0 | -5.0 |
| Net Change | +6.0 | +2.0 |

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to recovery of previous Throttleable Divert and Attitude Control System negative variances.

The favorable net change in the schedule variance is due to recovery of previous System Qualification and Hazard testing (to discover root cause, apply fixes and complete testing) negative variances. Additional testing required in order to meet the level of assurance on the Attitude Control System.

Contract Comments

Effort remaining includes Flight Test Support, continued verification of technology insertion, discrimination improvement and service life extension to September 30, 2015.

Appropriation: RDT&E

| | |
|-----------------------|--|
| Contract Name | THAAD Advanced Capability Development |
| Contractor | Lockheed Martin Corporation |
| Contractor Location | Huntsville, AL 35806 |
| Contract Number, Type | HQ0147-12-D-0001, CPFF/FFP |
| Award Date | February 01, 2012 |
| Definitization Date | February 01, 2012 |

| Initial Contract Price (\$M) | | | Current Contract Price (\$M) | | | Estimated Price at Completion (\$M) | |
|------------------------------|---------|-----|------------------------------|---------|-----|-------------------------------------|-----------------|
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 961.2 | N/A | N/A | 961.2 | N/A | N/A | 961.2 | 961.2 |

| Variance | Cost Variance | Schedule Variance |
|--|---------------|-------------------|
| Cumulative Variances To Date (1/31/2014) | +5.9 | -0.4 |
| Previous Cumulative Variances | -- | -- |
| Net Change | +5.9 | -0.4 |

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to less required maintenance for system labs (on Task Order (TO) 1), thereby allowing personnel to be diverted to other high priority tasks; and, TO6 work being done more efficiently than planned and subcontractor (Raytheon) reuse of materials (rather than buy/purchase).

The unfavorable cumulative schedule variance is due to TO2 Weapon System Engineering and Integration Team efforts completing later than planned; and, on TO6 due to subcontractor delayed material receipt and manufacturing tasks.

Contract Comments

This is the first time this contract is being reported.

This is the first year reporting this effort in the MDA SAR submission.

Deliveries and Expenditures

| Delivered to Date | Plan to Date | Actual to Date | Total Quantity | Percent Delivered |
|----------------------------------|--------------|----------------|----------------|-------------------|
| Development | 0 | 0 | 0 | -- |
| Production | 0 | 0 | 0 | -- |
| Total Program Quantity Delivered | 0 | 0 | 0 | -- |

| Expended and Appropriated (TY \$M) | | | |
|------------------------------------|----------|----------------------------|----------|
| Total Acquisition Cost | 138599.3 | Years Appropriated | 13 |
| Expended to Date | 92538.0 | Percent Years Appropriated | 72.22% |
| Percent Expended | 66.77% | Appropriated to Date | 103211.6 |
| Total Funding Years | 18 | Percent Appropriated | 74.47% |

The above data is current as of 2/14/2014.

Operating and Support Cost

BMDS

Assumptions and Ground Rules

Cost Estimate Reference:

None

Sustainment Strategy:

None

Antecedent Information:

None

| Unitized O&S Costs BY2002 \$K | | | |
|--------------------------------|------|-------|----------------------------|
| Cost Element | BMDS | | No Antecedent (Antecedent) |
| Unit-Level Manpower | | 0.000 | 0.000 |
| Unit Operations | | 0.000 | 0.000 |
| Maintenance | | 0.000 | 0.000 |
| Sustaining Support | | 0.000 | 0.000 |
| Continuing System Improvements | | 0.000 | 0.000 |
| Indirect Support | | 0.000 | 0.000 |
| Other | | 0.000 | 0.000 |
| Total | | -- | -- |

Unitized Cost Comments:

None

| | Total O&S Cost \$M | | | |
|-----------|----------------------------|-----|------------------|-------------------------------|
| | APB Objective/Threshold | | Current Estimate | |
| | BMDS | | BMDS | No Antecedent (Antecedent) |
| Base Year | N/A | N/A | N/A | N/A |
| Then Year | N/A | N/A | N/A | N/A |

Total O&S Costs Comments:

None

Disposal Costs:

None